

Flight Scientist Report  
Wednesday 01/19/2022 ACTIVATE RF107

Flight Type: Statistical Survey Flight  
Flight Route: ATLIC ZIBUT TILED ZIBUT ATLIC  
Special Notes: First of two flights on this day

### **King Air**

Pilot report (Wusk):

Morning cooperative flight with HU-25. Route of flight: KLF1-ATLIC-ZIBUT\_TILED-ZIBUT-ATLIC-TURET-KLF1. Surface weather clear with winds out of the west favoring KLF1 26, but both aircraft requested a 08 departure; B200 took off first based on upper wind profile. Uneventful climb on course to FL240. Positioning with HU-25 was maintained within 10 minutes through duration of science collection. Higher cloud level existed as forecast so we adjusted altitude down to FL200. Drogsondes deployed; ZIBUT, turnpoint, mid way back to ZIBUT, and ATLIC prior to descent. About 1043 L an electrical smell was present in the cockpit. Upon inspection the researcher found that the Iridium modem had popped a circuit breaker. The CB was secured and the power cable to the unit was disconnected. Ops continued without the modem. Maintained FL200 until final drogsonde release at ATLIC then descent for recovery. Uneventful Visual approach to r/w 26.

Flight scientist report (Shingler):

KLF1 ATLIC ZIBUT TILED ZIBUT ATLIC KLF1

Added an adjustable lens to nadir camera. Attempting to stay under cirrus during this flight. Granted a block of FL200-240. ASCENDING/DESCENDING as necessary to stay under cirrus. Low level stratified deck with tops up to 7k ft for most of the flight. Clear coming back into the coast. Lost the iridium modems (electrical issue) this flight, likely down for second flight as well. ATC communication issues on return. Unable to clear out of cirrus on return.

4 Sondes dropped

ZIBUT

TILED

1/2 TILED/ZIBUT

ATLIC

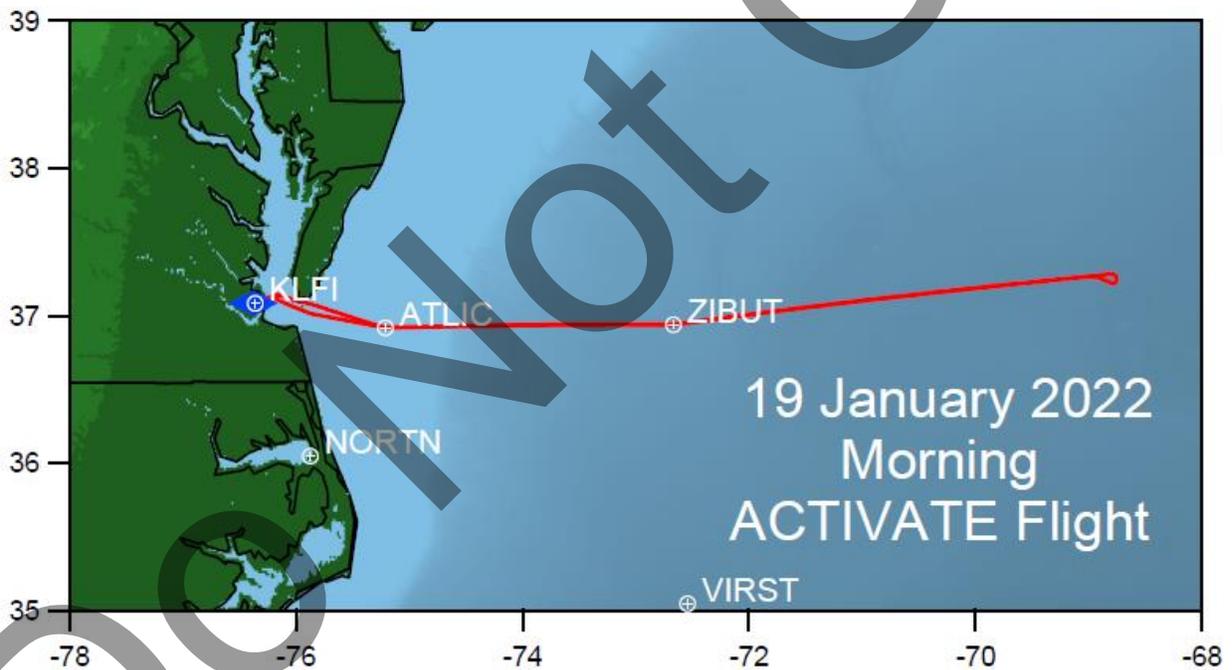
### **Falcon**

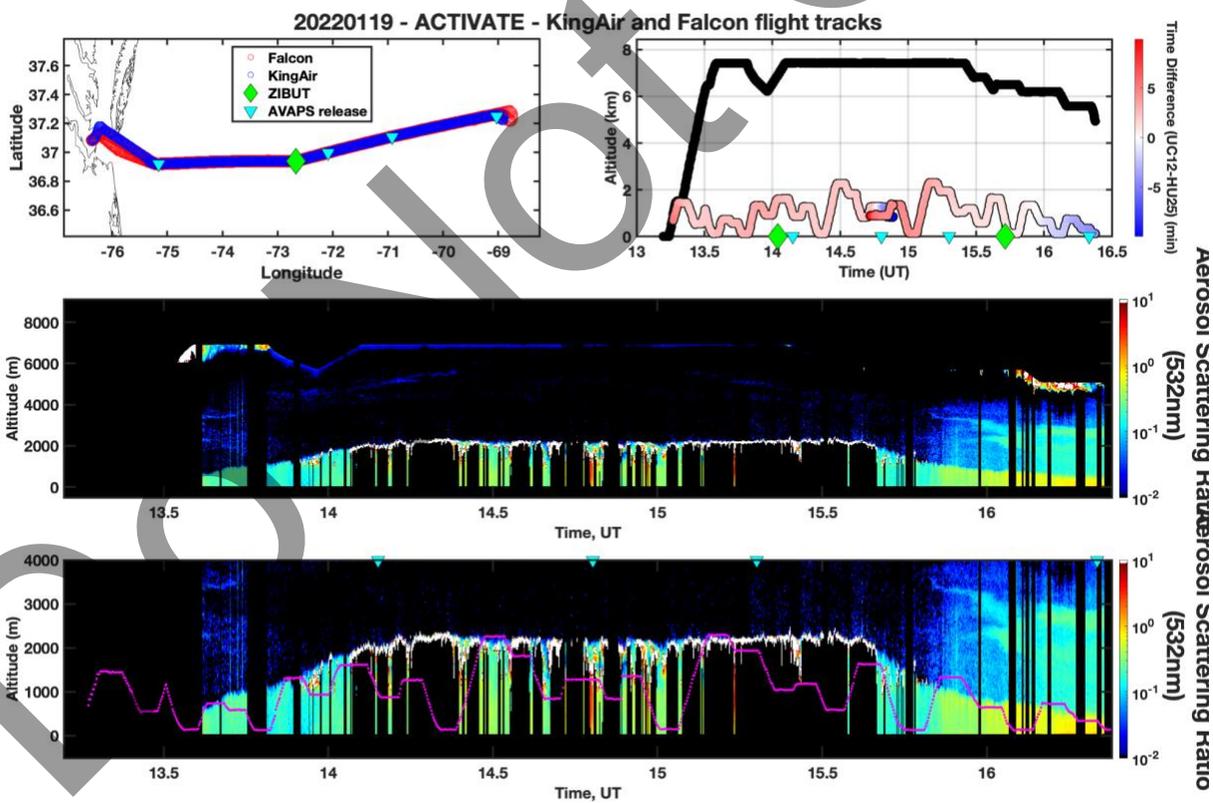
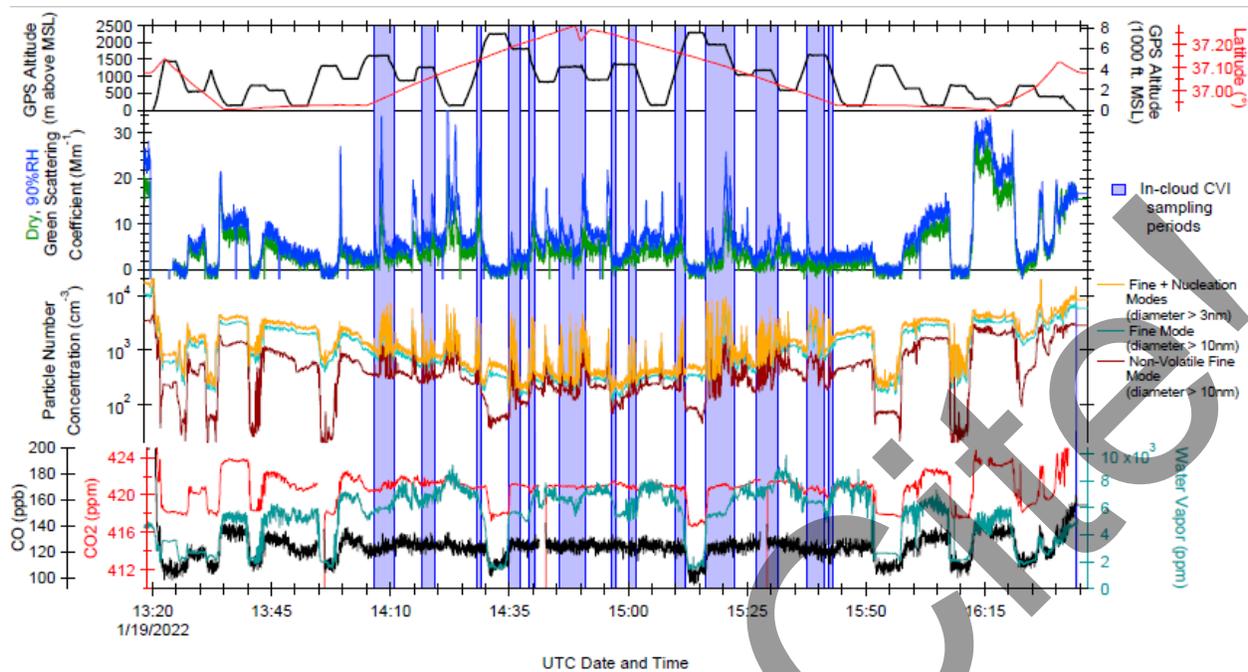
Pilot report (Slover):

Statistical survey mission flown as planned from KLF I ATLC ZIBUT TILED ZIBUT ATLC KLF I. Clouds up to about 8500' MSL and min alt down to 500' AGL. All profile elements (BCB, ACB, BCT, ACT, min alt) flown multiple times. Even though temps were below freezing in the clouds, no icing present due to higher total air temperatures.

Flight scientist report (Crosbie):

Stat survey to the east – ZIBUT-TILED. Clear conditions observed to the GS edge with a marked transition to ShCu. Cu thickened rapidly with spreadout near cloud top. A two layer structure became evident suggestive of Cu feeding an upper decoupled stratiform. In places the upper deck was extensive and unbroken but it was punctuated with fairly large clearings. There were places where the shallow Cu below were completely disconnected from the upper deck. Ice precip was common (appeared to be plates/columns in the upper cloud region) and some of the precip at lower levels (rain) was disconnected from thicker cloudy regions suggesting quite rapid cycling of the cloud cells. In places sun showers were observed.

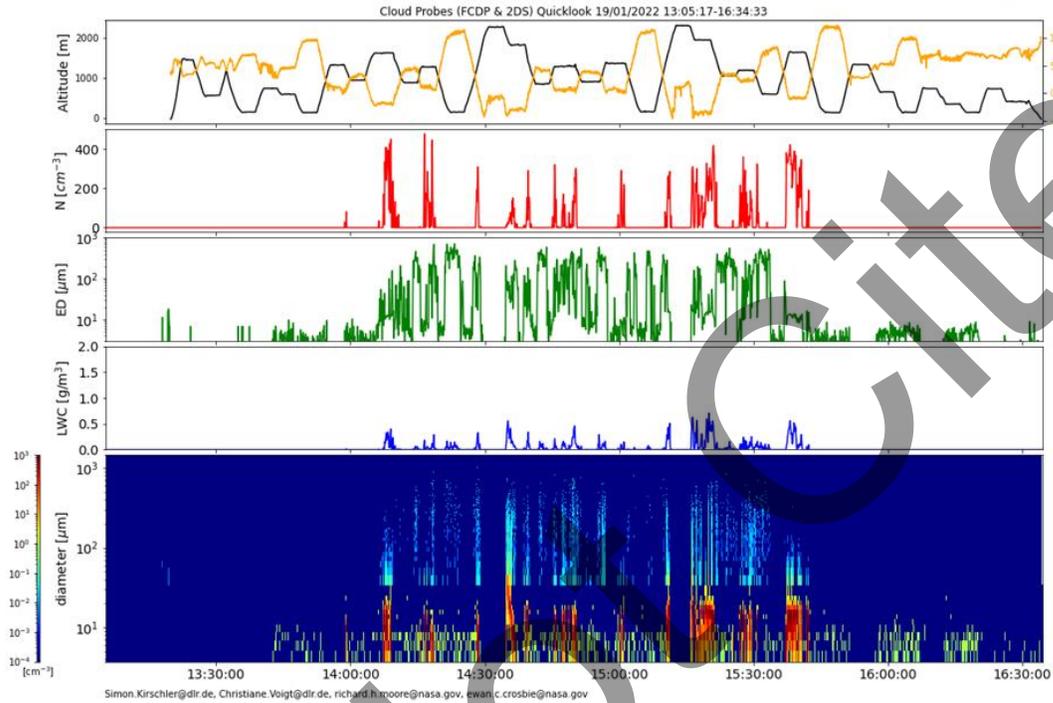




# Quicklook ACTIVATE Cloud Probes (FCDP & 2DS) Quicklook

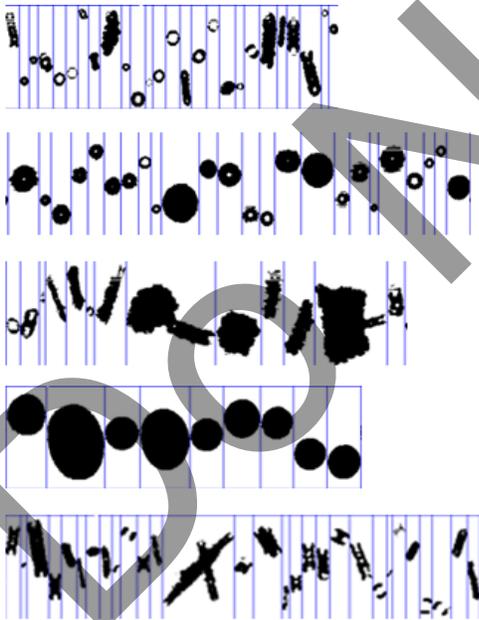
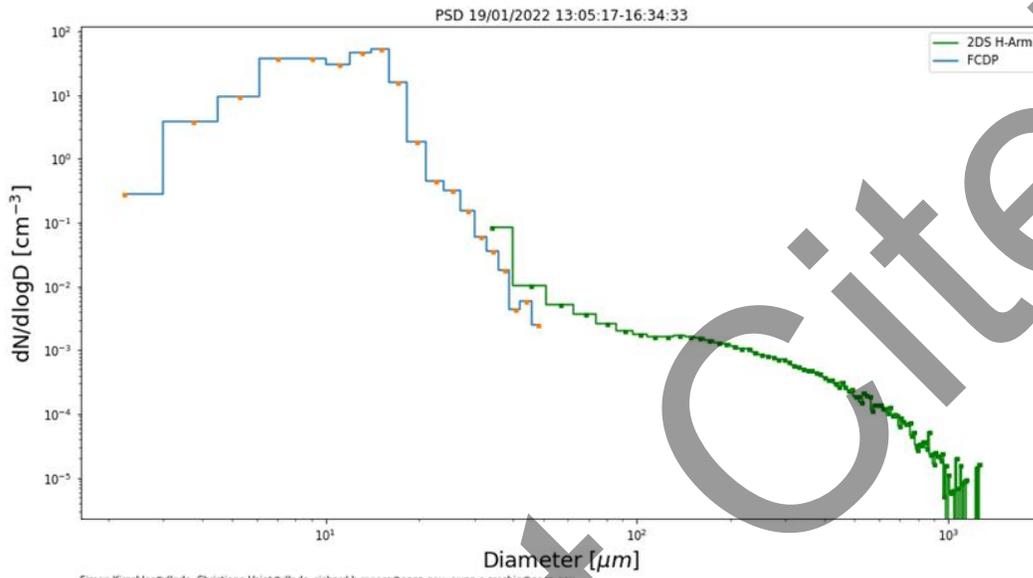
preliminary data, only for quicklook use

Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie



# PSD ACTIVATE

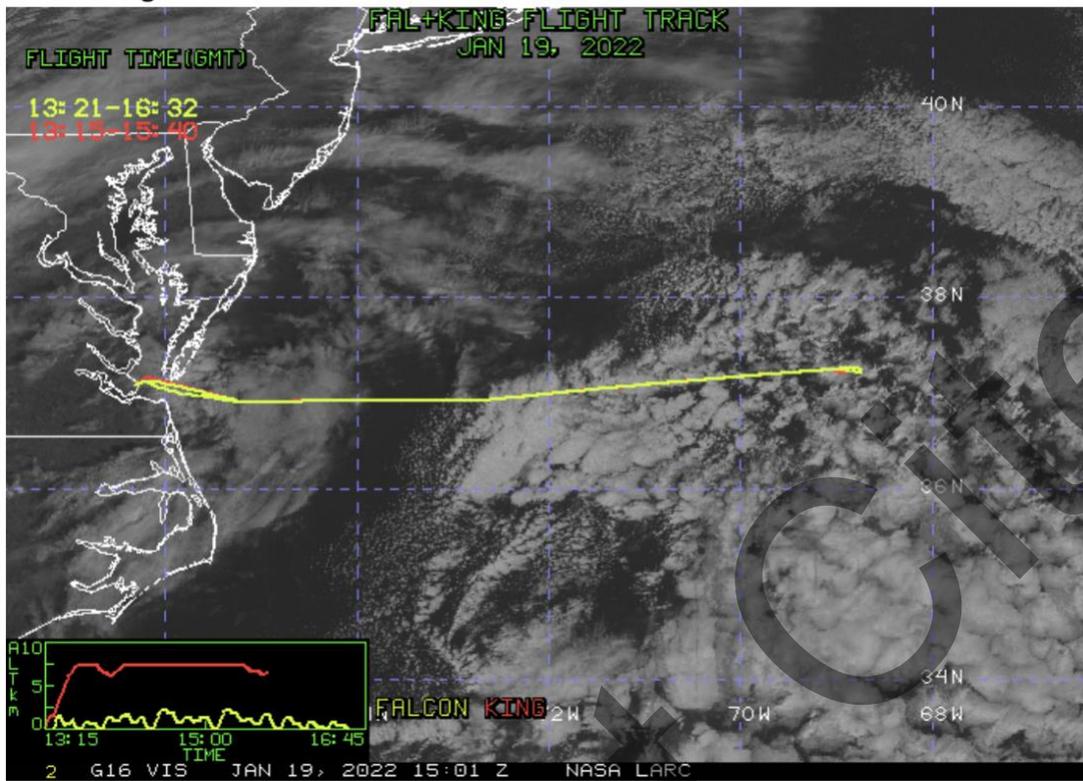
preliminary data, only for quicklook use  
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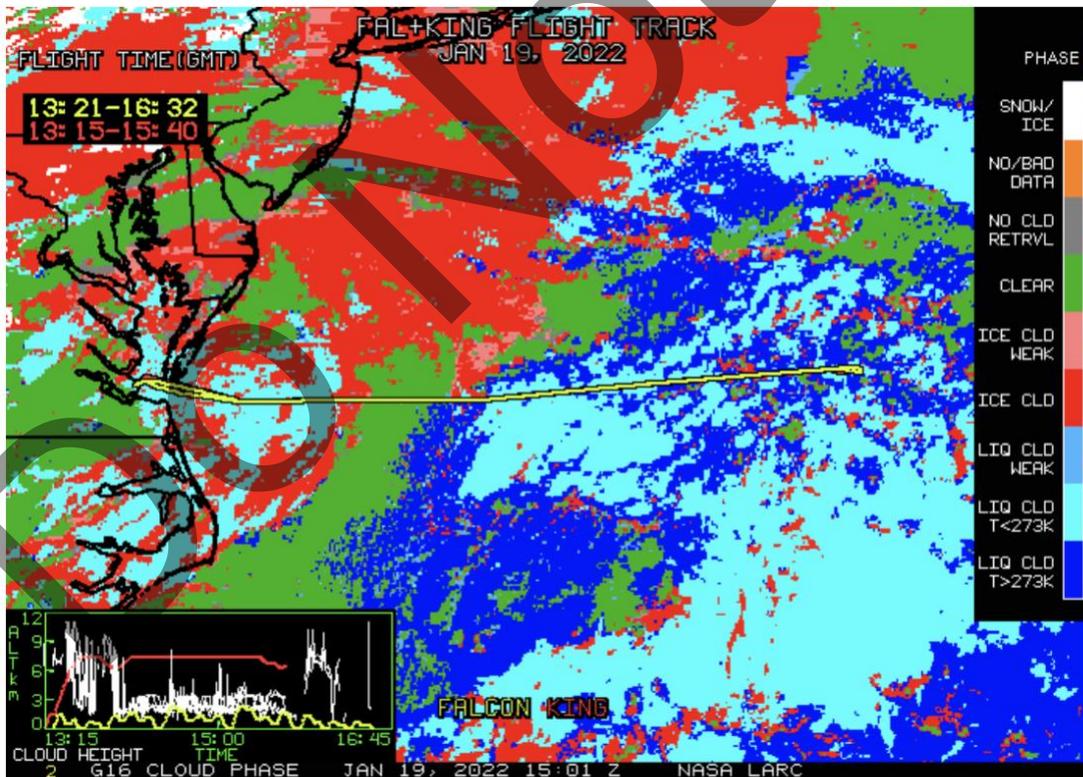
Mixed Phase clouds with ice/liquid  
Precip.

NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 107, 15:01 UTC Jan 19, 2022

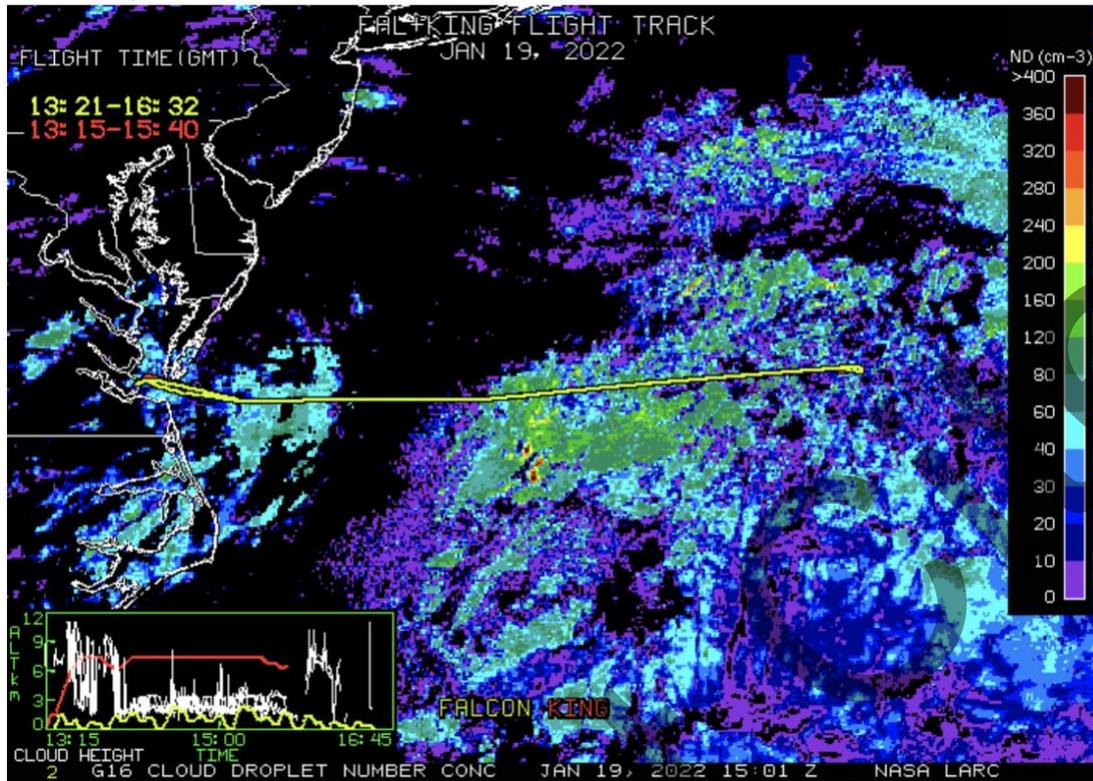
Visible Image



Cloud Phase



### Cloud Droplet Number Concentration (cm-3)



### Cloud-Top Height (Kft-ASL)

